

# Avian Influenza Carcass Disposal

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## Federal Agency Oversight

- Disposal handled at state/local level.
- Animal Health Protection Act of 2002 enables the Secretary of USDA to “prevent, detect, control, and eradicate diseases and pests of animals, such as avian influenza (AI), in order to protection animal health, the health and welfare of people, economic interests of livestock and related industries, the environment, and commerce”. (Jan 2006 Interim AI Response Plan USDA/APHIS/VS).
- USDA/APHIS” lead Federal Agency.

## Site Specific Disposal Decisions

- Owner/Operator - routine mortalities.
- US Army Corps and USDA’s Natural Resource Conservation Service (NRCS) - natural disaster (flood) mortalities.
- Dept Interior - wildlife mortalities.
- Foreign Animal Disease (FAD) outbreaks resulting in mass culling of livestock handled by USDA Animal and Plant Health Inspection Service (APHIS).

## Disposal Options

- On site and off site options exist.
- Site specific conditions influence disposal options.
- Existing options may include landfill, composting, direct burial, combustion (such as air curtain incinerators), alkaline hydrolysis, and rendering.
- Goal is to safely eliminate carcasses from suspected and infected farms in an environmentally sound manner.



## EPA Role in Disposal

- Historically, EPA has dealt with contaminated livestock when responding to oil/hazmat spills in agricultural settings or when state solid waste agencies requested technical assistance with landfill questions.
- USDA’s authority under the Animal Health Protection Act provides for eradication of animal disease agents which includes the response strategy, or countermeasure, of depopulation (culling) and disposal.
- Such actions may overlap with EPA’s various statutory authorities for protection of human health and the environment. For this reason, USDA requires consultation with environmental authorities to minimize potential environmental effects associated with disposal of contaminated material. (Nov. 2005 National Animal Health Emergency Management System (NAHEMS) Disposal Guidelines)
- Often the State environmental authorities are consulted and Federal EPA is available to the states for technical consultation consistent with RCRA authority.



## Disposal Permits

- Flu-infected carcasses are not hazardous waste under the Resource Conservation and Recovery Act =>hazardous waste permits not required.
- The RCRA hazardous waste system is confined to wastes that are specifically listed as hazardous or exhibit certain characteristics - viruses are not part of this system.
- While the RCRA hazardous waste regulatory regime is not an appropriate means of addressing bird carcasses, there are other controls in place to ensure proper handling and disposal.
- EPA can monitor changes in environmental conditions as a result of carcass disposal – leachate collection off landfills/air monitoring from incinerators/nitrogen loading from burial.

## EPA – Fate and Transport Concerns

- Virus is relatively unstable, inactivated by environmental factors (TO, pH, UV, dryness, salinity), disinfectants, detergents.
- Can persist a long time with supportive environmental conditions.
- Control measures – manipulation of conditions, removal of manure and litter, cleaning.
- Litter disposal – burial/composting/ incineration of manure and litter.
- Burial Concerns – distance to water, soil type & depth, temperature, weather, odor potential.
- Groundwater – virus degrades reasonably quickly, gw movement is slow, may minimize burial concerns at some sites.
- Waterborne transmission risk – very low in humans, higher in poultry.
- Suspected cases in poultry reported in Australia and Chile.

## Disposal Concerns

- Over 500 million bird carcasses are disposed of each year by the poultry industry.
- In response to the last FAD outbreak, Exotic Newcastle Disease, USDA oversaw the disposal of millions of bird carcasses.
- All carcass disposal situations involve public, animal, and environmental health.
- The primary consideration when disposing of flu-infected carcasses is rapid removal of the disease agent thru carcass disposal; especially true for zoonotic (impacting humans and animals) disease agents such as influenza.
- Environmental considerations include distance to water bodies, wells, height of water table, soil type and depth, temperature, weather, and odor potential.
- These criteria are identified in USDA Disposal Guidance. Effective decision making involves understanding these criteria and when necessary utilizing different types of disposal/treatment options to reduce health impacts.

## Acknowledgements

Region 1: Chuck Franks  
OSW: Paul Cassidy, Mario Ierardi, Rich Kinch  
ORD: Fran Kramer, Paul Lemieux



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